

Claims

1. A jaw crusher (10) comprising a frame (11) having a fixed jaw (16) and a swing jaw (18), which define a crushing chamber (26) for receiving material to be crushed, the swing jaw (18) being mounted for cyclic movement in the direction of the fixed jaw (16); a cross beam (42) adjustably disposed in the transverse axis of the frame; a toggle plate (54) for operative communication between a rear portion of the swing jaw (18) and a first face of the cross beam (42), characterised in that an hydraulic cylinder arrangement (60) is provided in operative communication with an opposite, second face of the cross beam (42), and in which, in use, the hydraulic cylinder arrangement (60) is pressurised to a predetermined value to provide an adjustable, pre-loaded reaction against the toggle plate (54).

2. A jaw crusher as claimed in claim 1, in which the predetermined value is greater than zero.

3. A jaw crusher as claimed in claim 1 or claim 2, in which the predetermined value is between 300 and 500 bar.

4. A jaw crusher as claimed in one of claims 1 to 3, in which the frame (11) includes a pair of walls (12, 14), between which the swing jaw (18) and fixed jaw (16) are disposed, and the hydraulic cylinder arrangement (60) consists of a pair of cylinders, one cylinder being arranged on either side of the frame (11), with the longitudinal axis of each cylinder being in the same plane as a respective wall (12, 14).

5. A jaw crusher as claimed in claim 4, in which an aperture (40) is provided in each wall (12, 14) for movably receiving a respective end of the crossbeam (42), and the cylinders are each mounted in a respective aperture (40).

6. A jaw crusher as claimed in claim 5, in which the cylinders

have an end profile adapted for complimentary abutment with the internal surface of the apertures (40).

7. A jaw crusher as claimed in any preceding claim, in which an hydraulic circuit is provided in communication with the hydraulic cylinder arrangement (60), for supplying pressure to the hydraulic cylinder arrangement (60).

8. A jaw crusher as claimed in claim 7, in which the hydraulic circuit includes a relief valve for releasing pressure from the hydraulic cylinder arrangement (60).

9. A jaw crusher as claimed in any preceding claim, in which means are provided for adjusting the spacing between the jaws.

10. A jaw crusher as claimed in claim 9, in which the means for adjusting the spacing between the jaws are in the form of shim packs or wedges.

11. A jaw crusher as claimed in any preceding claim, in which the hydraulic cylinder arrangement (60) is pre-loaded against a part of the frame (11).

12. A jaw crusher as claimed in any preceding claim, in which the frame (11) provides a reaction to the action of hydraulic cylinder arrangement (60).

13. A jaw crusher as claimed in any preceding claim, in which the hydraulic cylinder arrangement (60) is in operative engagement with the second face of the cross beam (42).